

### **REMARKS**

This paper is in response to the final official action dated January 30, 2009 (hereafter, "the official action"). This paper is timely filed as it is accompanied by a petition for extension of time and authorization to charge our credit card account in the amount of the requisite fee. The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 13-2855, under Order No. 29610/CDTCDT386.

Claims 1-17 are pending, but claim 5 has been withdrawn as directed to a non-elected invention. By the foregoing, claim 1 has been amended to clarify the claimed subject matter (the amendment simply makes a prior limitation more explicit). No change in scope is intended or effected. No new matter is added.

With respect to the statement at page 8 of the action that "it is required that all claims be amended to (the) elected group," there is no proper basis for making such a requirement. At least one generic claim, as pending, is patentable over the applied art for the reasons given herein, and thus the proposed requirement is premature.

The claim rejections are addressed below in the order presented in the official action. Reconsideration of the application, as amended and in view of the following remarks, is solicited.

### **CLAIM REJECTIONS 35 U.S.C. §112, 2nd PARAGRAPH**

All examined claims 1-4 and 6-17 have been rejected as assertedly indefinite for reciting the term "substituent," or more particularly, for reciting "optionally substituted." The applicant respectfully traverses the rejections.

A claim is considered definite as long as "the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the patent." *See* M.P.E.P. §2173. Here, one of ordinary skill would readily understand the scope of the term "substituent" in view of the accompanying description and the teachings of the prior art. Consistent with this assertion, the Office provided an accurate definition of the term in the official action dated June 5, 2008, which in itself constitutes evidence regarding the understanding of one of ordinary skill in the art. Further, the term is a well understood term of art in the chemical arts.

Moreover, exemplary substituents demonstrating written descriptive support for the term “optionally substituted” as it pertains to Ar<sup>1</sup>-Ar<sup>2</sup> groups may be found, for example, at page 12 of the specification, as filed. Furthermore, exemplary substituents demonstrating written descriptive support for the term “substituent” as it applies to bidentate ligands of formula (IIb) may be found, for example, at pages 10 and 11 of the application, as filed.

In view of the foregoing, the indefiniteness rejections should be withdrawn.

**CLAIM REJECTIONS 35 U.S.C. §112, 1st PARAGRAPH**

All examined claims 1-4 and 6-17 have also been rejected as assertedly not enabled. The applicant respectfully traverses the rejections.

As an initial matter, the examiner’s indication at page 3 of the outstanding official action that the applicant argued that the terms aryl and heteroaryl are well known terms of art in response to the enablement rejection is without any factual basis. No such argument was made.<sup>1</sup>

Additionally, the examiner’s reliance on text attributed to *In re Wiggins* is misplaced.<sup>2</sup> *Wiggins* can be easily distinguished from the presently claimed invention on the basis that the subject matter claimed in *Wiggins* relates to *compounds having anti-Parkinsonism activity*. The claimed subject matter claimed in *Wiggins* was determined to be so broad that it was entirely speculative as to the *required therapeutic activity*. No such concerns exist here where the presently claimed invention is directed to methods of forming metal complexes. *Wiggins* is therefore inapplicable to the subject matter at hand.

The proper focus of the enablement inquiry is whether it would take undue experimentation for one of ordinary skill in the art to fully practice the scope of the invention. The applicants respectfully submit that the nature and quantity of experimentation necessary to practice the full scope of the invention is not undue or excessive. Any experimentation needed to practice the claimed invention is routine

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<sup>1</sup> Nonetheless, the applicant respectfully submits that the terms aryl and heteroaryl are in fact well known terms of art notwithstanding the Office’s suggestion that different definitions may exist.

<sup>2</sup> The citation given in the action (179 USPQ 421) and the excerpted text correspond to *In re Wiggins*, not *In re Hawkins*.

and within the scope of permissive experimentation as defined by *In re Wands*, 858 F.2d 731 (Fed. Cir. 1988), as explained in further detail below.

The examiner acknowledged enablement where the metal is iridium and Ar<sup>1</sup>, Ar<sup>2</sup>, and L are phenyl and pyridinyl,<sup>3</sup> but indicated that the claimed methods are not enabled where the metal is selected from rhodium, platinum, and palladium, and where Ar<sup>1</sup>-Ar<sup>2</sup> and L are selected from aryl and heteroaryl groups other than phenyl pyridine. The applicants again respectfully submit that the exemplified disclosure set forth in the working examples may be extrapolated to other metals, diaryl ligands Ar<sup>1</sup>-Ar<sup>2</sup>, and bidentate ligands L, as claimed, in view of the general knowledge of one of ordinary skill in the art, as evidenced by the instant specification and (at least) the documents applied against the pending claims.

With respect to the examiner's recognition that iridium is enabled, and assertion that rhodium is not enabled, one of ordinary skill would immediately recognize that rhodium and iridium are isoelectronic species, and thus would have a reasonable expectation that these metals would behave similarly under similar conditions, i.e., that these metals form the same kinds of coordination complexes. Consistent with this assertion, the Office is respectfully directed to the very first paragraph of the Lamansky et al., *Inorg. Chem.*, 2001, 40:1704-1711 (2001) document, which affirmatively demonstrates that these metals do in fact form the same kinds of coordination complexes.

Furthermore, platinum and palladium are well known to form halo-bridged metal dimers. *See*, for example, WO 02/15645 at page 43. As these two metals are also isoelectronic, one of ordinary skill would have a reasonable expectation that they would behave similarly and form the same kinds of coordination complexes.

Moreover, numerous iridium, rhodium, platinum, and palladium coordination complexes with a number of different diaryl ligands are specifically described, for example, in EP 1239526 and EP 1349435, which were applied against the claims and are of record in this application.

Additionally, the application itself discloses a number of diaryl moieties Ar<sup>1</sup>-Ar<sup>2</sup>, and enabling ligands, as claimed, at pages 11-12, and references WO 02/15645

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<sup>3</sup> It seems the examiner considers the claims to be enabled when Ar<sup>1</sup>-Ar<sup>2</sup> is phenyl pyridine, L is phenyl pyridine, and M is Iridium.

(also applied against the claims), as disclosing other examples of suitable diaryl moieties Ar<sup>1</sup>-Ar<sup>2</sup>, and enabling ligands, as claimed.

Accordingly, the applicants respectfully submit that a large number of halo-bridged dimer complexes have been disclosed and/or are readily attainable in view of the prior art. Moreover, such complexes are known to form the metal complex end products recited in the pending claims. The differences between the presently claimed invention and the cited art relate to the method in which the metal complexes are prepared. Therefore, the exemplified disclosure of the working examples may properly be extrapolated to other metals, diaryl moieties Ar<sup>1</sup>-Ar<sup>2</sup>, and enabling ligands in view of the general knowledge of one of ordinary skill in the art, as evidenced by the instant specification and (at least) the documents applied against the pending claims.

In view of the above comments, the applicants respectfully submit that the enablement rejections have been overcome and should be withdrawn.

#### **CLAIM REJECTIONS 35 U.S.C. §102**

Additionally, all examined claims 1-4 and 6-17 remain variously rejected as anticipated by one or more of EP 1349435 A1 to Kamatani, EP 1239526 to Tsuboyama, Lamansky et al., *Inorg. Chem.*, 40:1704-1711 (2001), and International Patent Publication No. WO 02/15645 A1 to Lamansky *et al.* The applicant respectfully traverses the rejections.

As an initial matter, the applicant notes that there is no need to specifically discuss each of the rejections in detail as the same arguments apply to each of the references.

In order to anticipate any of the pending claims, the applied documents must disclose each and every feature *as arranged* in the claims. *See, e.g., Net Moneyin Inc. v. Verisign, Inc.*, Appeal No. 07-1565, Slip Op. at 15-16 (Fed. Cir. Oct. 20, 2008) (“[O]ur precedent informs that the ‘arranged as in the claim’ requirement applies to all claims and refers to the need for an anticipatory reference to show all of the limitations of the claims arranged or combined in the same way as recited in the claims, not merely in a particular order.”); *see also, Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989) (“The identical invention must be shown in as complete detail as is contained in the patent claim.”). There are no examples or other

specific disclosure in any of the applied documents that can meet this standard. Consequently, anticipation rejections cannot be sustained, as explained in greater detail below.

Claims 1-4, 6-12, and 15-17

None of the cited art discloses or even suggests reacting a halo-bridged dimer complex according to formula (I) with a bidentate ligand L of formula  $\text{Ar}^1\text{-Ar}^2$  in the presence of an enabling ligand, as claimed.

The examiner is correct in stating at page 6 of the action that “Applicant did not claim the “enabling ligand” must be bidentate ligands capable of forming at least one carbon-to-metal bond with the metal.” *Rather, claims 1-4, 6-12, and 15-17 recite that the bidentate ligand L forms at least one carbon-to-metal bond with the metal.* The enabling ligand may be either monodentate or bidentate. This explanation should address the examiner’s comments at page 7 of the outstanding action regarding what applicant intends regarding the enabling ligand.

Each of the applied documents merely discloses reacting a halo-bridged dimer with a bidentate ligand such as acetylacetone (“acac”), picolinic acid (“pic”), or an alkylsalicylimine (“sal”), to break the stable chloro-bridged dimer and form monomeric complexes. The applied art specifically teaches that the monomeric complex must then be further reacted in a separate step with a second bidentate ligand, which is capable of forming at least one carbon-to-metal bond with the metal of the complex to obtain metal complex of formula  $\text{M}(\text{Ar}^1\text{Ar}^2)_n\text{L}$ . Thus, the prior art invariably involves two steps to form the desired metal complexes.

While acac, pic, and sal can be interpreted as enabling ligands capable of breaking the halogen bridge of the complexes, they are not bidentate ligands L capable of forming at least one carbon-to-metal bond with the metal, as claimed. This explains why the art invariably discloses the obtained monomeric complexes must be further reacted to obtain the desired product  $\text{M}(\text{Ar}^1\text{Ar}^2)_n\text{L}$ . *See, for example, Lamansky et al., Inorg. Chem., 40:1704-1711 (2001), at page 1707, which discloses “The  $\text{C}^{\wedge}\text{N}_2\text{Ir}(\text{acac})$  complexes can then be used to prepare  $\text{IrC}^{\wedge}\text{N}_3$ .”*

The synthetic scheme of EP illustrated at page 50 of EP 1349435 and referenced by the examiner also demonstrates this very point; two separate synthetic reactions are used to prepare the exemplified tris-diaryl metal complex.

Accordingly, these documents do not disclose reacting a halo-bridged dimer complex according to formula (I) with a bidentate ligand L of formula  $\text{Ar}^1\text{-Ar}^2$  in the presence of an enabling ligand capable of breaking the halogen bridge of the complex according to formula I, as recited in claims 1-4, 6-12, and 15-17.

Claim 13

The applied documents also do not disclose forming said halo-bridged dimer and then reacting same with a reactive ligand capable of breaking the halogen bridge in a one pot process, as recited in claim 13.

Claim 14

The applied documents do not disclose reacting a metal halide with a ligand according to formula (II) in the presence of a metal-free base of sufficient strength to deprotonate the compound of formula (II).

For at least the foregoing reasons, the anticipation rejections should be removed.

**CONCLUSION**

It is submitted that the application is in condition for allowance. Should the examiner wish to discuss any matter of form or procedure in an effort to advance this application to allowance, the examiner is respectfully invited to telephone the undersigned attorney at the indicated telephone number.

Respectfully submitted,

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